EZ Connect

USB/Ethernet Converter

◆ Network access via your PC's USB bus
◆ Functions similar to a standard network card
◆ Supports 10BASE-T and 100BASE-TX connections
◆ Bus powered—external power not required
◆ Automatic enumeration and suspend/resume
◆ Easy installation, no configuration needed
◆ LED indicator shows network status

SMC®
N e t w o r k s

User Guide
SMC2206USB/ETH

EZ Connect
User Guide

From SMC's EZ line of low-cost workgroup LAN solutions

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* SMC will provide warranty service for one year following discontinuance from the active SMC price list. Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

<div style="text-align:center">

SMC Networks, Inc.
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COMPLIANCES

FCC - Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Note: In order to maintain compliance with the limits of a Class B digital device, SMC requires that you use a quality interface cable when connecting to this device. Changes or modifications not expressly approved by SMC could void the user's authority to operate this equipment.

Attach unshielded twisted-pair (UTP) to the RJ-45 port and shielded USB cable to the USB port.

Industry Canada - Class B

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par l'Industrie.

VCCI Class B Compliance (Japan)

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取り扱い説明書に従って正しい取り扱いをして下さい。

EC Conformance Declaration - Class B

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Fructuós Gelabert 6-8, 2º, 4ª,
08970 - Sant Joan Despí,
Barcelona, Spain.

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI Emission:
- Limit class B according to EN 55022:1998
- Limit class B for harmonic current emission according to EN 61000-3-2/1995
- Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995

Immunity:
- Product family standard according to EN 55024:1998
- Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ±4 kV, Air Discharge: ±8 kV)
- Radio-frequency electromagnetic field according to EN 61000-4-3:1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Electrical fast transient/burst according to EN 61000-4-4:1995 (AC/DC power supply: ±1 kV, Data/Signal lines: ±0.5 kV)
- Surge immunity test according to EN 61000-4-5:1995 (AC/DC Line to Line: ±1 kV, AC/DC Line to Earth: ±2 kV)
- Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996 (0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
- Power frequency magnetic field immunity test according to EN 61000-4-8:1993 (1 A/m at frequency 50 Hz)
- Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994 (>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)

LVD:
- EN 60950 (A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

Warning: Do not plug a phone jack connector in the RJ-45 port. This may damage this device. Les raccordeurs ne sont pas utilisé pour le systéme téléphonique!

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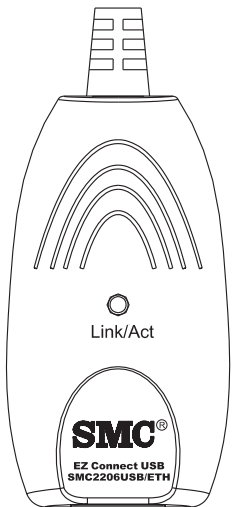
ABOUT THE EZ CONNECT USB/ETHERNET CONVERTER

SMC's family of USB products offers a convenient and cost-effective means of bringing straightforward peripheral connectivity to the desktop based on the Universal Serial Bus (USB). These products feature true plug-and-play connection of PC peripherals "outside the box" and mark a significant advance in desktop cable management. Using the EZ Connect™ USB/Ethernet Converter you can simplify PC connections in the home, office or on the road.

The Universal Serial Bus is designed to replace the current serial, parallel, and other port types used on a PC with a single universal interface. Many different types of devices can be attached to a single PC USB interface by using a cascade of USB hubs (such as SMC's EZ Hub USB).

USB uses a unique cable and connector system. The "upstream" side of the USB cable ("A" side) connects to a USB hub or PC; and the "downstream" side ("B" side) connects to USB devices or to another hub's B side. The USB/Ethernet Converter has a 30 cm (1 foot) length of USB cable with an "Type-A" connector on one side, and an RJ-45 Ethernet port on the other side. This USB Ethernet converter allows you to connect to a 10BASE-T or 100BASE-TX LAN using your computer's USB port.

LED Indicators

The SMC2206USB/ETH includes one status LED indicator, as described in the following figure and table.

Link/Act

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EZ Connect USB
SMC2206USB/ETH

LED	Condition	Status
Link/Act	On Yellow	Indicates a valid 10 Mbps network connection
	Flashing Yellow	Indicates incoming and outgoing network traffic at 10 Mbps
	On Green	Indicates a valid 100 Mbps network connection
	Flashing Green	Indicates incoming and outgoing network traffic at 100 Mbps
	Off	Indicates no network connection

Features and Benefits

◆ Compatible with IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet standards

◆ Full- and half-duplex support for both 10 Mbps and 100 Mbps speeds

◆ Auto-negotiation selects 10/100 Mbps and full/half duplex automatically

◆ Support for IEEE 802.3x full-duplex flow control prevents packets from being dropped under heavy loading

◆ Complies with USB spec. 1.1

◆ Derives power from the host bus—external power supply not required

◆ Low power consumption and intelligent power management preserves battery life of portable computers

◆ Hot swappable capability enables the converter to be inserted and removed without powering down or reconfiguring the computer

◆ Driver support for Microsoft Windows 98/2000/Me/XP and Linux 2.4 or later

◆ Advanced Configuration and Power Interface (ACPI) 1.0b and Microsoft OnNow/PC98/99 compliant

INSTALLATION

Equipment Checklist

After unpacking the EZ Connect™ USB/Ethernet Converter, check the contents of the box to be sure you have received the following components:

- SMC2206USB/ETH

- Driver diskette

- SMC Warranty Registration Card

- This User Guide

Power Requirements

USB devices can be either self-powered or bus-powered. A device which has no power connector is bus-powered, and derives its operating power from the USB connection directly. The EZ Connect™ USB/Ethernet Converter is bus-powered – all you need to do is plug it into a PC or self-powered USB hub.

System Requirements

To use the EZ Connect™ USB/Ethernet Converter you must have:

- A host PC that supports the Universal Serial Bus

- 16 MB of RAM

- Windows 98/2000/Me/XP or Linux.

You also need to provide a standard twisted-pair Ethernet cable to connect to a local network 10BASE-T/100BASE-TX hub or switch.

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Procedure

Note: Please view the README.TXT file on the driver diskette for product related information.

Windows 98

1. Connect the USB cable's Type -A connector into the USB port on the PC.

2. Connect the USB/Ethernet Converter to a local network hub or switch. See the guidelines under "Network Connection" on page 6.

3. The "New Hardware" Wizard displays.

4. When prompted for the installation medium, check the floppy disk drive and insert the driver diskette.

5. You will observe several loading status windows. Follow the displayed instructions.

6. When prompted to restart the PC, remove the driver diskette and click "Yes."

Note: If the Wizard does not appear when you plug in the converter, please view the section "Is USB correctly installed" in the README.TXT file on the adapter driver diskette.

Network Connection

To connect the USB/Ethernet Converter to the local network, follow these steps:

1. Prepare a straight-through twisted-pair cable, maximum length 100 meters (328 feet). Use Category 3, 4 or 5 cable for connection to 10 Mbps Ethernet, or Category 5 cable for connection to 100 Mbps Fast Ethernet.

2. Connect one end of the cable to the RJ-45 port on the USB/ Ethernet Converter, and the other end to any available station port on a network hub or switch. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

3. Check that the USB/Ethernet Converter has a valid connection by observing the Link/Act LED. If the indicator fails to light when you connect to a network hub or switch, see "Troubleshooting" on page 8.
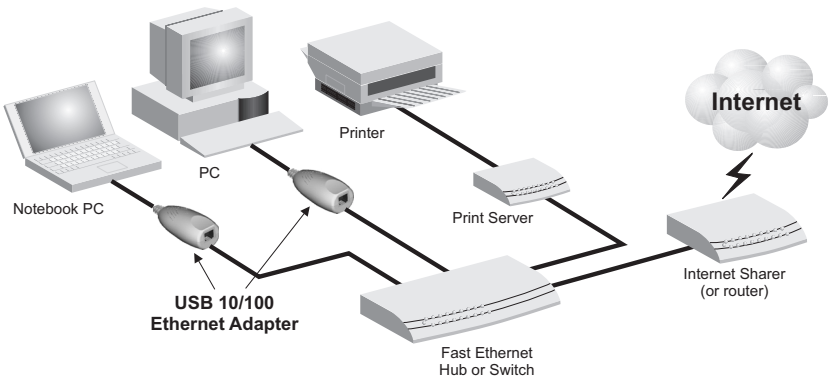
System Network Settings

When installation is complete and you have rebooted your system, the USB/Ethernet Converter will appear to the system as a normal Ethernet network adapter.

To enable network access on your system, click on the "Network" icon in the "Windows Control Panel." Provide a name to identify your computer on the network, and assign it to a workgroup or domain if necessary. Add any additional network services or protocols you require.

If you need to access the Internet, be sure you configure the TCP/IP protocol by specifying a DHCP server, or manually entering a valid IP address, subnet mask, and default gateway. Also be sure to specify a domain name server which can translate web site names (URLs) to IP addresses. Then reboot your computer to enable your network settings.

USB Application Diagram

TROUBLESHOOTING

Symptom

You cannot connect to the network.

Probable Causes

- You did not install the software driver and USB/Ethernet Converter as indicated in this manual.

Possible Solutions

- Uninstall the driver from your operating system, power off and disconnect any devices attached to the converter, and disconnect it from the USB port.

- Reinstall the converter according to the installation instructions in this manual.

Symptom

The Link/Act LED does not light

Probable Causes

There is a connection or cabling problem

Possible Solutions

- Check that the network hub or switch is powered on.

- Be sure the network cable is properly connected to both devices.

- Verify that Category 5 cable is used for 100 Mbps connections and that the length of the cable does not exceed 100m (328 ft).

- Check the network cable and connections for defects. Replace the defective cable if necessary.

Symptom

You cannot access a Windows Network Service.

Probable Causes

• The Windows service you are trying to access is restricted to a specific workgroup or domain.

Possible Solutions

• Open the Network icon under the Control Panel and assign your computer to a workgroup or domain. Then reboot your computer to enable the new settings.

Symptom

You cannot access a Netware Service.

Probable Causes

• You have not enabled NetWare service on your computer.

• You do not have a valid user ID or password for the server you are trying to access.

Possible Solutions

• Open the Network icon under the Control Panel and add Netware services. Then reboot your computer to enable the new settings.

• Contact your system administrator to obtain a user ID and password for the server you want to access.

Symptom

You cannot connect to the Internet.

Probable Causes

• You have not yet configured your computer for TCP/IP.

Possible Solutions

- If your network does not have a DHCP server (which can dynamically assign an IP address to your computer when it connects to the network), contact your network administrator to obtain a valid IP address. Click on the Network icon in the Control Panel, and specify the required TCP/IP settings. Then reboot your computer to enable the new settings.

SPECIFICATIONS

Model
SMC2206USB/ETH

Ports
USB cable with one upstream connector, USB Type A
One downstream port, RJ-45 Ethernet (10/100 Mbps)

Wiring Topology
Point-to-point connections

Access Method
USB Port: USB spec. 1.1 differential and bi-directional,
            12 Mbps (high-speed device)
RJ-45 Port: IEEE 802.3 and 802.3u CSMA/CD, 10 and 100 Mbps
            baseband, full and half duplex

Cabling
USB Port: Shielded USB cable, 5 m (16.4 ft) maximum
RJ-45 Port: 10BASE-T — 100-ohm Category 3, 4, 5 shielded/
            unshielded twisted-pair, maximum 100 m (328 ft)
            100BASE-TX — 100-ohm Category 5 shielded/
            unshielded twisted-pair, maximum 100 m (328 ft)

Standards
USB Specification 1.1 (USB high-power device)
IEEE 802.3 Ethernet
IEEE 802.3u Fast Ethernet
IEEE 802.3x full-duplex flow control

System Requirements
A PC and operating system that supports the Universal Serial Bus
(Windows 98/2000/Me/XP or Linux)
Also requires device driver (included)

Size
21 x 31 x 61 mm (0.83 x 1.22 x 2.40 in.)

Weight
35 g (1.23 oz)

Input Power
3.3 V, 0.2 A maximum

Temperature
Operating: 0 to 55 °C (32 to 131 °F)
Storage: -20 to 65 °C (-4 to 149 °F)

Humidity
10 to 90% noncondensing

Compliances
FCC Class B
VCCI Class B
CE Mark EN 61000-4-2/3/4/5/6/8/11
CISPR 22 Class B

NDIS 5 Drivers
Windows 98
Windows 2000
Windows Me
Windows XP

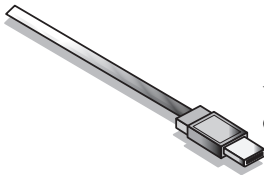**Unix Driver**
Linux kenel 2.4 or later

CABLE SPECIFICATIONS

Cable Types and Connectors

Cable Types and Specifications			
Cable	**Type**	**Max. Length**	**Connector**
USB	Shielded USB	5 m (16.4 ft)	Type A & B
10BASE-T	Cat. 3,4,5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45

USB Cable

The USB/Ethernet Converter includes an attatched 30 cm (1 foot) length of Universal Serial Bus cable terminated with a Type-A connector. The end with the Type-A connector is used to connect to a host PC or upstream hub.
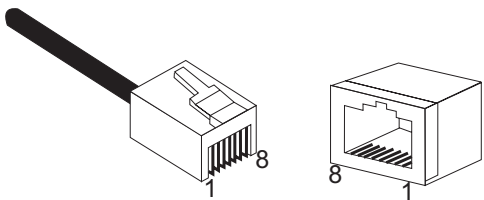

USB Type-A
Connector

USB Pinouts	
Pin	**Assignment**
Pin 1	+5 VDC
Pin 2	-Data
Pin 3	+Data
Pin 4	Ground

RJ-45 Connector Pin Assignments

Caution: DO NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

An Ethernet or Fast Ethernet twisted-pair link segment requires two pairs of wires. Each wire pair must be attached to the RJ-45 connector in the specific orientation detailed below.

RJ-45 Pinouts	
Pin	**Assignment**
Pin 1	Transmit Data+
Pin 2	Transmit Data -
Pin 3	Receive Data +
Pin 6	Receive Data -
4,5,7,8	Reserved

FOR TECHNICAL SUPPORT, CALL:

From U.S.A. and Canada (24 hours, 7 days a week)
(800) SMC-4-YOU; (949) 707-2400; (949) 707-2460 (Fax)
From Europe (8:00 AM - 5:30 PM UK Greenwich Mean Time)
44 (0) 1188 748740; 44 (0) 1189 748741 (Fax)

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http://www.smc.com/support.html
World Wide Web:
http://www.smc.com/
FTP Site:
ftp.smc.com

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Southern Europe:	33 (1) 41.18.68.68;	Fax 33 (1) 41.18.68.69
Central/Eastern Europe:	49 (0) 89 92861-200;	Fax 49 (0) 89 92861-230
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Taiwan:	886-2-2659-9669;	Fax 886-2-2659-9666
Asia Pacific:	(65) 238 6556;	Fax (65) 238 6466
Korea:	82-2-553-0860;	Fax 82-2-553-7202
Japan:	81-45-224-2332;	Fax 81-45-224-2331
Australia:	61-2-9416-0437;	Fax 61-2-9416-0474
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